JUSTIN JOEL TAKODJOU

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Linkedin | Github | My website | Youtube

SUMMARY

AI & Software Engineer with 6+ years of experience in data engineering, full-stack software development, ML and Generative AI. Proven ability to design and deploy scalable AI agents, RAG systems, and real-time applications on cloud environments (AWS, GCP, Azure). Strong background in Python, LangChain, LangGraph, ML & DL, and data engineering, with expertise in handling large datasets (LiDAR, geospatial, big data).

SKILLS

- **Programming & Dev**: Python, C#, Kotlin, React, FastAPI, Flask, REST APIs, Git, CI/CD, TDD, Pytest
- **AI/ML**: Scikit-learn, PyTorch, TensorFlow, HuggingFace, LangChain, LangGraph, YOLO, OpenCV
- **Data Engineering**: PostgreSQL/PostGIS, PL/SQL, MongoDB, Redis, Vector DBs (FAISS, Pinecone, Weaviate), ETL, Spark, Airflow
- **Cloud & MLOps**: AWS (SageMaker, Lambda), GCP (Vertex AI, BigQuery), Azure AI, Docker, Kubernetes, MLflow
- **Tools**: Supabase, Power BI, Tableau, FME, ArcGIS Enterprise, QGIS

EXPERIENCE

CGI **Mar. 2025 - Present**
Consultant AI / Syst. Admin *Quebec, Canada*

- Managed a large-scale enterprise system with 200+ servers, 1,000+ active users, and 4 clustered SQL Servers, ensuring high availability, security, and scalability across DEV, SIT, UAT, and PROD.
- Led system & database migrations (servers, services, roles, and data) to centralized platforms, while implementing Python-based automation for monitoring and optimization, reducing downtime by 30%.
- Designed and implemented an automated patch deployment process, enabling updates and configuration changes across hundreds of servers without manual access, improving efficiency and reliability.
- Contributed to innovation initiatives by evaluating Gemini Code Assist, and actively participating in bi-weekly AI meetings to present and discuss advancements in Generative AI, RAG, and Computer Vision.

TakosGIS **Jan. 2025 - Present**
AI Engineer & Content Creator *Quebec, Canada*

- Developed and optimized AI agents (LangGraph) and RAG-based chatbots (LangChain, OpenAI, Streamlit) enabling interactive data exploration and document intelligence.
- Built end-to-end AI applications with Python, Docker, PostgreSQL, and Supabase, integrating real-time data processing, APIs, and scalable cloud-ready architectures.
- Designed and delivered training programs on SQL, Python, and AI-powered applications, empowering developers to build production-grade systems.
- Created educational content (10k+ views) on LLMs, Docker, n8n, and testing frameworks, contributing to AI community knowledge sharing.

Pavemetrics Systems Inc. **May. 2022 - Dec. 2024**
Software Developer I & II - AI *Quebec, Canada*

- Designed and maintained large-scale data pipelines (ETL) in Python (multithreading, multiprocessing, Cython) to process terabytes of sensor data (camera, LiDAR, GPS).
- Built and optimized scalable databases (PostgreSQL/PostGIS, Supabase on AWS) with advanced indexing, partitioning, and query optimization, enabling efficient access to high-volume datasets.
- Developed and deployed full-stack applications (React.js, Flask, Supabase, Docker, Apache) for real-time monitoring and visualization of vehicles and IoT sensor data.
- Implemented automated workflows and plugins in Python to streamline repetitive data engineering tasks, reducing manual effort by 40%.
- Architected cloud-ready software solutions using microservice principles, ensuring scalability, maintainability, and integration with AWS services.

- Built a web-based interactive platform for large dataset exploration, supporting Machine Learning dataset preparation (feature extraction, labeling, data augmentation).
- Designed and delivered real-time alerting systems (email, dashboards) for anomaly detection on vehicle sensors, laying the foundation for Computer Vision and AI pipelines.

Geolocation **Jun. 2021 - Dec. 2021**

Data Engineer *Quebec, Canada*

- Processed and cleaned large-scale LiDAR point cloud datasets to remove noise and prepare high-quality inputs for ML/DL models.
- Standardized 3D data and imagery into machine learning–ready formats for object detection, semantic segmentation, and terrain analysis.
- Built reproducible ETL pipelines integrating LiDAR, imagery, and vector datasets to support Computer Vision and Deep Learning workflows

Ngomez Engineering **Jun. 2016 - Aug. 2019**

Data Engineer *Yaounde, Cameroun*

- Collected and processed large-scale imagery datasets (satellite and drone images), 3D point clouds (LiDAR), and vector datasets (structured annotations)
- Designed and implemented data pipelines to clean, normalize, and transform raw data into formats usable for Machine Learning and Deep Learning models.
- Delivered curated datasets for tasks such as object detection, classification, and segmentation in Computer Vision projects.
- Gained strong expertise in data cleaning, feature extraction, and dataset preparation to enable reliable model training and evaluation

Projects

ML-Based Engagement Prediction (Python)

- Developed a scalable ML system for Facebook comment engagement prediction (F1-score: 0.72), leveraging Naive Bayes, Decision Tree, SVM, and Random Forest with hyperparameter tuning & SMOTE, and identified key predictors such as hateful content and high like/share counts.

Indoor Navigation App (Flutter)

- Developed a multi-floor indoor navigation mobile app using BLE beacons and smartphone sensors, combining signal strength with step detection and a multi-level graph network to deliver adaptive routes (e.g., wheelchair-accessible paths).

Education

Laval University Quebec, CA

Bachelor of Geomatics Engineering May. 2024

- Coursework: Machine Learning & Deep Learning, Advanced programming (Python, C++, Java), Algorithms & Data Structures, Database Systems, Statistical Analysis, Spatial Analysis & GIS, Web & Mobile Application development, Maths & Economic in Engineering
- Honors: Academic Excellence Scholar (x3)

Development

Microsoft AI-900 certification	Aug. 2025
Prompt Design in Vertex AI, Google	Mar. 2025
Introduction to Responsible AI, Google	Feb. 2025
Introduction to LLM, Google	Feb. 2025
Introduction to Generative AI	Feb. 2025
LangChain for LLM Application Development, DeepLearning.AI	Mar. 2025
ArcGIS Enterprise: Configuring a base deployment, Esri	May. 2025
Spatial Data Science, Esri	2024